CLAIMS:

1. A fuel cell comprising an electrically conducting electrode-support substrate, an inner electrode layer, a solid electrolyte layer, an outer electrode layer and an interconnector, wherein

said electrode-support substrate includes a flat plate having two flat surfaces which are in parallel with each other and forming a plurality of gas flow passages therein, and curved portions located at both ends of said flat plate;

said interconnector is formed on one surface of the flat plate of said electrode-support substrate;

said inner electrode layer is formed on the other flat surface of said electrode-support substrate where the interconnector has not been provided;

said solid electrolyte layer is laminated on the electrode-support substrate so as to cover said inner electrode layer, and is extending from the other surface of said flat plate up to both side ends of said interconnector passing through both curved portions; and

said outer electrode layer is laminated on said solid electrolyte layer so as to be opposed to the other surface of said flat plate but so as not to be opposed to said curved portions, and its both ends are located on the outer sides of both side ends of said interconnector.

2. A fuel cell according to claim 1, wherein said inner electrode layer is a fuel electrode and said outer electrode layer is an oxygen electrode.

3. A fuel cell according to claim 1, wherein in said electrode-support substrate, the flat plate has a thickness of 2.5 to 5 mm, and the curved portions have

a radius of curvature of 1.25 to 2.5 mm.

4. A fuel cell according to claim 1, wherein a plurality of gas flow passages are arranged side by side along a center line extending in a lengthwise direction of said flat plate.

5. A fuel cell according to claim 4, wherein if a distance between said gas flow passages and the one surface or the other surface of said flat plate is denoted by L_1 and the distance between the neighboring gas flow passages by L_2, a relationship $L_1 < L_2$ is satisfied.

6. A fuel cell according to claim 5, wherein if a distance between the curved portion and one of said plurality of gas flow passages positioned on the side of the curved portion of said electrode-support substrate is denoted by L_3, a relationship $L_3 > L_1$ is satisfied.

7. A fuel cell according to claim 4, wherein the openings of said gas flow passages are of an elliptic shape having a short axis extending in the direction of thickness of said flat plate and a long axis extending in the lengthwise direction of said flat plate.

8. A fuel cell according to claim 7, wherein if the length of said short axis is denoted by R_1 and the length of said long axis by R_2, a relationship $R_2 \geqq 1.03\ R_1$ is satisfied.

9. A fuel cell assembly having a fuel cell stack obtained by electrically connecting a plurality of fuel cells of claim 1 through an electrical member.

10. A fuel cell comprising an inner electrode substrate, a solid electrolyte layer, an outer electrode layer and an interconnector, wherein

said inner electrode substrate includes a flat plate having two flat surfaces which are in parallel

with each other and forming a plurality of gas flow passages therein, and curved portions located at both ends of said flat plate;

said interconnector is formed on one surface of the flat plate of said inner electrode substrate;

said solid electrolyte layer is laminated on said inner electrode substrate, and is extending from the other surface of said flat plate up to both side ends of said interconnector passing through both curved portions; and

said outer electrode layer is laminated on said solid electrolyte layer so as to be opposed to the other surface of said flat plate but so as not to be opposed to said curved portions, and its both ends are located on the outer sides of both side ends of said interconnector.

11. A fuel cell according to claim 10, wherein said inner electrode layer is a fuel electrode and said outer electrode layer is an oxygen electrode.

12. A fuel cell according to claim 10, wherein in said inner electrode substrate, the flat plate has a thickness of 2.5 to 5 mm, and the curved portions have a radius of curvature of 1.25 to 2.5 mm.

13. A fuel cell according to claim 10, wherein a plurality of gas flow passages are arranged side by side along a center line extending in a lengthwise direction of said flat plate.

14. A fuel cell according to claim 13, wherein if a distance between said gas flow passages and the one surface or the other surface of said flat plate is denoted by L_1 and the distance between the neighboring gas flow passages by L_2, a relationship $L_1 < L_2$ is satisfied.

15. A fuel cell according to claim 14, wherein if a distance between the curved portion and one of

said plurality of gas flow passages positioned on the side of the curved portion of said inner electrode substrate is denoted by L_3, a relationship $L_3 > L_1$ is satisfied.

16. A fuel cell according to claim 13, wherein the openings of said gas flow passages are of an elliptic shape having a short axis extending in the direction of thickness of said flat plate and a long axis extending in the lengthwise direction of said flat plate.

17. A fuel cell according to claim 16, wherein if the length of said short axis is denoted by R_1 and the length of said long axis by R_2, a relationship $R_2 \geqq 1.03\ R_1$ is satisfied.

18. A fuel cell assembly having a cell stack obtained by electrically connecting a plurality of fuel cells of claim 10 through an electrical member.